REMARKS

Restriction/Claim Objections/Interview Summary

The Examiner has restricted the claims to three groups. During a telephone conversation with the undersigned attorney, Daniel J. Polglaze, on April 8, 2004, a provisional election was made, without traverse, to prosecute the invention of group III, claims 9-14, and 24-26. Applicant hereby affirms this election, withdraws claims 1-8 and 15-23, and reserves the right to file divisional applications on these claims at a later date.

Additionally, Claims 11 and 12 were objected to because of the informality of claim 11 being incorrectly numbered; specifically, claim 11 has been amended and now depends from claim 10. Claims 9-14 and 24-26 remain for consideration in the application.

Drawings

The drawings were objected to as failing to comply with 37 CFR 1.84(p)(5), as they did not include the following reference sign(s) mentioned in the description, specifically "100". Applicant submits herewith formal drawings correcting the inadvertent use of the reference numeral "200" in Figure 1, which is replaced with the correct numeral "100". No new matter has been added.

Rejection under 35 U.S.C. § 103

Claims 9-14 and 24-26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over McConnell et al. (U.S. Patent No. 5,986,952). Applicant traverses this rejection.

As defined in the specification, a ROM embedded DRAM has sections of DRAM cell structures that are programmed as ROM cells and sections of DRAM cells that function as DRAM cells. In contrast, the DRAM cells of the McConnell et al. reference are all used as redundant replacements for ROM cells, or are not used at all. In fact, McConnell et al. does not describe a ROM embedded DRAM as is recited by the claim, but describes a ROM that uses DRAM cells as a redundancy replacement for ROM cells. No DRAM cells of the McConnell et al. reference are used as DRAM cells as is the use in a ROM embedded DRAM of the present claims. The suggestion that the DRAM redundancy of McConnell et al. is the same as a ROM embedded DRAM which has both functioning ROM cells and DRAM cells is incorrect. The present claims are directed to memories that have RAM cells functioning as hard programmed

ROM cells, and regular DRAM cells functioning as DRAM cells. In contrast, the McConnell et al. DRAM cells are used only as a redundancy for ROM cells that are not working.

Further, paragraph 0004 of the present application specification described the problems with using a scheme such as that described in McConnell et al., namely:

> Traditional DRAM repair includes using redundancy schemes such as row or column replacement, or mapping a defective bit or block of bits to a redundant array in order to effect repairs to the memory. While such schemes do offer some repair, at times a greater degree of certainty is desired.

It is this exact type of traditional system, specifically indicated as not acceptable, that the Office Action attempts to assert against the present claims.

Further, the error correction discussed in McConnell is used as a check to see "if one of the first units having the modified memory cells has been replaced by the at least one redundant second unit" (see. McConnell et al., col. 3, ll. 15-17). The Office Action suggests that "[i]t is also obvious that corrected data would be provided to an application hardware ..." While this may be true, the "corrected" data in McConnell et al. is actually data that is contained in the DRAM cells being used as a redundancy for the ROM cells.

Applicant respectfully submits that claims 9 and 24 are allowable, as the McConnell et al. reference does not teach the ROM embedded DRAM portion of the claims, nor does it suggest (as it is the only reference used) the subject matter of claims 9 or 24.

With respect to claim 10, claim 10 depends from and further defines patentably distinct claim 9, and is also believed allowable. However, claim 10 is also allowable for at least the following additional reason. Claim 10 recites "correcting if the decoded ROM bit differs from the read ROM bit." This is not done in McConnell et al., which only discusses error correction for a determination of whether DRAM cells that are being used as a redundancy for ROM cells have the correct data therein, or whether the ROM cells have been replaced with DRAM cells in a redundancy operation. This differs from the clear and unambiguous claim language.

Claims 11-14 and 25-26 directly or indirectly depend from and further define one of patentably distinct claims 9 of 24, and are also believed allowable.

CONCLUSION

Applicant respectfully requests reconsideration of the application and an indication that the claims are allowable. If the Examiner has any questions or concerns regarding this application, please contact the undersigned at (612) 312-2203.

Respectfully submitted,

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